Hyperledger Cacti Home

<table>
<thead>
<tr>
<th>Project</th>
<th>Hyperledger Cacti</th>
</tr>
</thead>
<tbody>
<tr>
<td>Status</td>
<td>GRADUATED</td>
</tr>
<tr>
<td>CII Badge</td>
<td>blocked URL</td>
</tr>
<tr>
<td>Description</td>
<td>Hyperledger Cacti is a plugin-based framework which aims to provide developers with an abstraction over protocol specific implementations and enabling interoperability. This enables solutions to adapt to new protocols and make transactions involving multiple public and/or permissioned ledgers more easily.</td>
</tr>
</tbody>
</table>

Key Characteristics

What is Hyperledger Cacti?

Cacti is a pluggable enterprise-grade framework to transact on multiple distributed ledgers without introducing yet another competing blockchain. An SDK of SDKs

Cacti aims to provide Decentralized, Adaptable and Secure Integration to and between Blockchain Networks. It's aims to cover as many protocols as possible through an extensible plugin architecture where new protocols or functionality can be added by creating new plugins.

Why should I use Cacti?

- To address blockchain fragmentation: Allow developers to connect and perform transactions across different blockchain networks.
- Save (distributed) app developers from re-inventing the wheel: Simplify secure interactions with blockchain nodes using a standardized interface across protocols.
- Lower risk of adopting blockchain by businesses: Abstract your app layer from the blockchain protocol, allowing developers to easily change the blockchain protocol being used and reducing risks of your app being obsolete.

What are Cacti Design principles?

- Key principles:
  - Plugin architecture: Maximize flexibility and future-proofing through plug-in architecture
  - Secure by Default: Avoid needing explicit action from users to have a secure Cacti deployment
  - Toll Free: Users should not be required to use tokens for transactions & Operators should not be required to take a cut of individual transactions
  - Low Impact Deployment: Do not interfere with or impede existing network requirements
- Additional principles:
  - Wide Support: Support as many blockchain protocols as possible, and constantly support new ones.
  - Prevent Double Spending: Whenever two networks are interacting with each other ensure that there is no double spend whenever possible.
  - Preserving Ledger Features: Using Cacti should allow you to use all the features which the protocol enables.
  - Horizontal Scalability: Cacti should never be the bottleneck of all the networks involved. IE: If 2 networks can do 100tps, Cacti should be able to handle 200

What are Cacti current features?

- Connectors for different blockchain protocols
  - Hyperledger Besu, Hyperledger Fabric, (WIP for Corda, Geth, and Quorum)
- Atomic transfers across ledgers
  - HTLCs for Ether, ERC20 (WIP Fabtoken)
- Decoupled identity
  - JWT, (WIP OpenAPI)
- Metrics
  - Prometheus and Grafana based monitoring of the individual plugins
How can I collaborate?

To see a guide on how to use Hyperledger Cacti, take a look at the links below in the Documentation section. Keep in mind that this is currently being updated so please write us through the different means listed in the Communication section.

If you want to collaborate in Cacti’s development, you can pick an issue directly from Github – we’ve linked to some good first issues below that are good places to start for new contributors. If you need extra guidance, contact us through the chat or join one of our meetings and we can help you.

74 Open
0 Closed
Query: state=open&labels=good-first-issue

<table>
<thead>
<tr>
<th>#</th>
<th>Title</th>
<th>Assigned By</th>
<th>Type</th>
<th>Level</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>feat(connector-daml): aio image</td>
<td>jagpreetsinghsasan</td>
<td>bug</td>
<td>200</td>
<td>May 28, 2024</td>
</tr>
<tr>
<td>2</td>
<td>docs(examples): migrate supply chain app to ethereum</td>
<td>petermetz</td>
<td>bug</td>
<td>400</td>
<td>May 19, 2024</td>
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<tr>
<td>3</td>
<td>build: upgrade all test infrastructure container images to ubuntu-dind</td>
<td>petermetz</td>
<td>bug</td>
<td>100</td>
<td>Oct 30, 2023</td>
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<tr>
<td>4</td>
<td>fix(weaver): resource incorrect permission assignment</td>
<td>jagpreetsinghsasan</td>
<td>bug</td>
<td>300</td>
<td>Oct 11, 2023</td>
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<tr>
<td>5</td>
<td>fix(weaver): improper resource access authorization</td>
<td>jagpreetsinghsasan</td>
<td>bug</td>
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<td>Oct 11, 2023</td>
</tr>
<tr>
<td>6</td>
<td>fix(test-tooling): use of hardcoded password</td>
<td>jagpreetsinghsasan</td>
<td>bug</td>
<td>100</td>
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<td>bug</td>
<td>300</td>
<td>Oct 11, 2023</td>
</tr>
<tr>
<td>8</td>
<td>tools(connector-besu): fix CVE-2022-21190</td>
<td>zondervancalvez</td>
<td>bug</td>
<td>300</td>
<td>Oct 5, 2023</td>
</tr>
<tr>
<td>9</td>
<td>perf(github): add knob/flag to manually override CI skip</td>
<td>petermetz</td>
<td>bug</td>
<td>400</td>
<td>Sep 10, 2023</td>
</tr>
<tr>
<td>10</td>
<td>style(cmd-api-server): server Unexpected any linter W in</td>
<td>petermetz</td>
<td>bug</td>
<td>400</td>
<td>Sep 10, 2023</td>
</tr>
<tr>
<td>11</td>
<td>docs(devcontainer): add trivy and its VSC ode Extension</td>
<td>petermetz</td>
<td>bug</td>
<td>400</td>
<td>Aug 31, 2023</td>
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<tr>
<td>12</td>
<td>ci: break up .yaml into smaller workflow files - use workflow calls</td>
<td>petermetz</td>
<td>bug</td>
<td>400</td>
<td>Aug 24, 2023</td>
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<tr>
<td>13</td>
<td>build(weaver): eliminate need for package-local.json</td>
<td>petermetz</td>
<td>bug</td>
<td>400</td>
<td>Aug 10, 2023</td>
</tr>
</tbody>
</table>

Getting Involved

You are invited to get involved with the Cacti project. Here are some ways you can get started.

1. Join one of our pair programming calls
   a. North America
      - Morning/Europe
      - Evening
   b. Asia-Pacific
      - Morning/Europe
      - Morning

2. Instructions on building Cacti (the framework itself)
3. Join communication channels and introduce yourself and ask questions (details below)
4. Grab a good first issue based on your level of expertise/technical area (s) of expertise or interests:
   a. All Good First Issues
   b. Climate Action SIG Specific Good First Issues
   c. Level 100 - Introductory Good First Issues
   d. Level 200 - Intermediate Good First Issues
   e. Level 300 - Advanced Good First Issues
   f. Level 400 - Expert Good First Issues

Communication

Mailing List
- cactus@lists.hyperledger.org
  - subscribe
  - messages

Chat (for questions and ephemeral discussions)

Questions are welcome and best asked in Hyperledger Discord. Learn more about Hyperledger Discord here, get the invite and check out one of the many Cacti project channels.

Meetings

https://lists.hyperledger.org/g/cactus/calendar

Calendar of Public Meetings
#2065 opened Jun 01, 2022 by zondervancalvez
2
  • fix(security): vulnerabilities found in corda-4-8-all-in-one

#2064 opened Jun 01, 2022 by zondervancalvez
6
  • fix(security): vulnerabilities found in corda-4-7-all-in-one

#2063 opened Jun 01, 2022 by zondervancalvez
1
  • fix(security): vulnerabilities found in besu-all-in-one

#2055 opened Jun 01, 2022 by zondervancalvez
1
  • developer experience: test ledgers

#1924 opened Mar 14, 2022 by RafaelAPB
3
  • docs: add org.opencontainers.image.description label to all images

#1657 opened Dec 14, 2021 by petermetz
0
  • refactor: use new node protocol imports

#1654 opened Dec 14, 2021 by petermetz
8
  • fix(docs/examples): cockpitEnabled default value confusion

#1653 opened Dec 13, 2021 by petermetz
0
  • test(jest): fix jest-haste-map: Haste module naming collisions

#1645 opened Dec 08, 2021 by petermetz
1
  • ci: custom check for package module,main,types,etc

#1644 opened Dec 08, 2021 by petermetz
1
  • ci: enable caching of container image builds

#1567 opened Nov 23, 2021 by petermetz
0
  • test: stabilize cactus-plugin-htlc-eth-besu-erc20 openapi validation

#1528 opened Nov 10, 2021 by petermetz
0
  • test: fix flake in install-basic-plugin-ledger-connector-fabric-0-7-0.test.ts

#1495 opened Oct 27, 2021 by petermetz
0
  • test(connector-corda): fix flaky deploy-cordapp-jars-to-nodes test

#1485 opened Oct 22, 2021 by petermetz
2
  • test(connector-corda): fix flaky v4.7 test

#1469 opened Oct 21, 2021 by petermetz
2
• fix(key-converter): Files needs to migrated from Tape to Jest
  
  • feat: support for M1 macs (arm64)
  
  • docs: add cross-references to BUILD.md and CONTRIBUTING.md
  
  • test(connector-besu): fix missing multi-party all-in-one ledger image caching
  
  • fix(plugin-htlc-eth-besu): error handling get-status-endpoint
  
  • fix(plugin-htlc-eth-besu): error handling get-single-status-endpoint
  
  • fix(plugin-htlc-eth-besu-erc20): error handling in get-single-status-endpoint
  
  • fix(plugin-htlc-eth-besu-erc20): error handling in get-status-endpoint
  
  • [EPIC] fix: error handling in REST API endpoints
  
  • fix(iroha-connector): make compareAndSetAccountDetail accept correct parameters
  
  • feat(iroha-connector): make Iroha AIO a single node setup with an in-memory database
  
  • feat(iroha-connector): replace iroha docker AIO healthcheck with curling the iroha metric page
  
  • fix(iroha-connector): fix and test Iroha command Call Engine
  
  • docs(ci): debugging on CI server through ssh with VScode debugger
Hyperledger Cacti is currently undergoing a major refactoring effort to enable the desired to-be architecture which will enable plug-in based collaborative development to increase the breadth of use cases & Ledgers supported.

refactor(containers): migrate all images to ubuntu-22.04
#1211 opened Aug 12, 2021 by petermetz

refactor(cmd-api-server): migrate from convict to yargs
documentation enhancement good-first-issue API_Server Dependencies Developer Experience Hacktoberfest good-first-issue-400-expert
#1200 opened Aug 10, 2021 by petermetz

#1159 opened Jul 22, 2021 by petermetz

test(test-tooling): dummy consortium definition generator
enhancement nice-to-have
#830 opened Jun 29, 2021 by petermetz

test(test-tooling): test flaky corda-test-ledger boot hangs
documentation enhancement good-first-issue Corda Dependencies Hacktoberfest nice-to-have
#1159 opened Jul 22, 2021 by petermetz

#1096 opened Jun 28, 2021 by jagpreetsinghsasan

feat(keychain-google-sm): bootstrap README.md
documentation good-first-issue Keychain
#1096 opened Jun 28, 2021 by petermetz

#1200 opened Aug 10, 2021 by petermetz

test(test-tooling): flag to omit contract deployment in Fabric AIO container
#887 opened Apr 29, 2021 by petermetz

docs(examples): carbon accounting microk8s deployment files
documentation nice-to-have
#860 opened Apr 24, 2021 by petermetz

meta: categorize good first issues by experience level
good-first-issue Developer Experience
#811 opened Apr 18, 2021 by petermetz

build(docker): support ARM64
#545 opened Feb 05, 2021 by petermetz

build(npm): post version script to sync openapi specs
documentation nice-to-have
#479 opened Jan 13, 2021 by petermetz

build(api-client): generate java, go clients
#393 opened Nov 20, 2020 by petermetz

test(test-tooling): dummy consortium definition generator
enhancement nice-to-have
#316 opened Oct 15, 2020 by petermetz

#860 opened Apr 24, 2021 by petermetz

Hyperledger Cacti is currently undergoing a major refactoring effort to enable the desired to-be architecture which will enable plug-in based collaborative development to increase the breadth of use cases & Ledgers supported.
For a better understanding of where Hyperledger Cacti is heading please see the Whitepaper and Design Principles below!

**Documentation**

- Whitepaper
- Original Design Principles Google Doc

**Project Management**

Hyperledger Cacti uses GitHub Issues to track work items.

**Repositories**

Hyperledger Cacti uses GitHub for source code control.

- Main repo

**History**

- Approved by the TSC on 30 APR 2020
- Proposal the TSC voted on

**Recent space activity**

**Space contributors**

- Peter Somogyvari (1 day ago)
- Sean W. Bohan (29 days ago)
- Ramakrishna V (37 days ago)
- Ry Jones (45 days ago)
- Rafael Belchior (50 days ago)
- ...